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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,695	09/22/2003	Ramani Mani	125643-1	5199
6147	7590	05/03/2005	EXAMINER	
GENERAL ELECTRIC COMPANY GLOBAL RESEARCH PATENT DOCKET RM. BLDG. K1-4A59 NISKAYUNA, NY 12309			GARTENBERG, EHUD	
			ART UNIT	PAPER NUMBER
			3746	

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

Office Action Summary	Application No. 10/664,695	Applicant(s) MANI ET AL.	
	Examiner Ehud Gartenberg	Art Unit 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The limitation "typical velocity of an operational engine ambient inlet airflow" is not enabled. The disclosure does not teach what is the numerical value of said velocity, how to deduce it for different operational conditions, at what distance from the wall and at what distance from the leading edge said velocity is determined.
3. Applicant is queried whether he employs what is commonly known in the art as boundary-layer removal through suction and/or boundary-layer energizing through blowing (or injection).
4. It is not clear from the disclosure whether the apparatus uses suction or injection. The geometries of the duct, the inlet and the outlet would be different for each one of the alternatives, and the disclosure does not enable which one would be the best mode of use contemplated by the Applicant.
5. Claims 27 and 36 are rejected because the disclosure fails to enable the claimed inlet fan duct for turbo-propellers, ramjets, rockets, pulse-jets, turbines, steam turbines.

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6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 19-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. One of ordinary skill in the art could not determine from the claims whether the claimed apparatus is intended to be used in the suction mode or the injection mode.

8. Claims 27 and 36 are rejected because it is not clear what is claimed by commercial engines, corporate engines, military engines, marine engines, and what are the distinguishing limitations between them. For example, in what category would fall a 25,000 lbf. turbofan mounted on a transport airplane configured to transport VIP's and owned and operated by the Air Force? Also, it is not clear what is claimed by "turbines".

9. Claims 19-36 are rejected because it is not clear what precisely is the claimed "inlet fan duct outer wall", because element 22 in Fig. 4 is actually the inner wall.

10. Claims 23 and 32 could not construed in view of the depiction in Figure 4, that does not show the limitations as claimed.

The condition of the claims and of the disclosure precludes a complete examination, but to the extent that the invention can be understood, a search of the prior art has been conducted and the following rejections have been made.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 19 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nayfeh et al (1974). Nayfeh teaches that the attenuation rates of sound increased as the boundary layer thickness decreased, see e.g., 0th and 1st mode in Figures 6 and 7. It was known in the art at the time of the claimed invention that the only two methods of decreasing the boundary layer thickness, and thus of increasing the air velocity adjacent to an inlet fan duct, were to either blow fluid into the boundary layer (re-energizing it) or to remove it altogether or partially by suction. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to attenuate a jet engine noise by increasing the air velocity adjacent the wall by using a duct that either sucks or blows into the boundary layer, as per Nayfeh's teaching that a thinner boundary layer better attenuates the level of sound.

13. Subject to the cautionary statement above, the following rejection is made under 35 USC 103(a): Claims 19-36 are rejected as being obvious in view of Howell 3735593, that teaches the invention as disclosed and as claimed. Note that an anticipation rejection under 35USC102(b) is not possible in this case only because it is not clear how to interpret the limitation "duct outer wall", in view of Fig. 4 that is actually showing a duct inner wall. Howell teaches a system to attenuate jet noise comprising a nacelle 3

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having an inlet for a fan 1, a fluid duct for increasing the velocity of the air adjacent the wall by suction, said duct having an inlet 14, an outlet 13. The sizing of the duct is considered a desired result that would be an obvious design optimization of said duct. Note that as shown, inlet 14 is contiguous and circumferential, as indicated by the presence of the centerline on the bottom of Fig. 1. Also note that the second end of the duct provides a steep expansion into blade 11, and that the duct including its extension into blade 11 is providing a plenum, that both the inlet and the outlet as depicted have a slot, and the duct is disposed within nacelle 3.

Conclusion

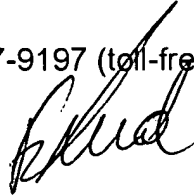
14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. McBride 3572960, Raffy 4199295, Blackner 6094907, Tindell 5934611, Howell 3735593.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ehud Gartenberg whose telephone number is 571 272 4828. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on 571 272 4834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ehud Gartenberg
Primary Examiner
Art Unit 3746

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